REMARKS

Favorable reconsideration of the present application, in view of the present amendment and in light of the following remarks, is respectfully requested.

Claims 1-19 are currently pending in this application. No claims have been added or canceled herewith. Claims 1, 8 and 15 have been amended herewith to recite that the call flow event queues are dedicated to their corresponding threads, although it is believed that one of ordinary skill in the art would have already understood this from the previous claims. Such a change is supported by the previously pending claims as well as by Figures 4A and 4B and their corresponding description starting at page 16, line 8. Thus, no new matter has been added.

Furthermore, in response to the objection to the specification, the specification has been updated with current status information and identifying information for co-pending applications cited therein.

In the outstanding Office Action, claims 1-19 were rejected under 35 USC 103(a) as being obvious over a three-reference combination including: (1) Lin et al., A Dynamic Load-Balancing Policy With a Central Job Dispatcher (hereinafter Lin), (2) U.S. Patent No. 5,924,093 (hereinafter "the '093 patent") and (3) U.S. Patent No. 6,909,708 (hereinafter "the '708 patent"). Applicant respectfully traverses the rejection (1) as not disclosing all of the elements of the claims and (2) as lacking a permissible motivation to combine the references.

Claim 1 recites "determining a call flow workload level for each of the plurality of threads" and "reassigning a call flow event from the call flow event queue dedicated to the first thread to the call flow event queue dedicated to a second of the plurality of threads." Such positively recited limitations are not taught by the combination of references.

Lin is directed to load-balancing techniques generally; however, the specifics of claim 1 are not disclosed in Lin. In section 4, the Office Action admits "Lin discusses load balancing among distributed nodes, whereas the claimed invention balances load among threads." The Office Action then tries to overcome the admitted deficiency of Lin by citing the '093 patent and alleging that "a thread and a node are analogous, in that conventional distributed systems have one thread per node."

However, this allegation ignores the fact that the '093 patent explicitly states the opposite. The abstract, cited by the Office Action, states "the system is comprised of one or more nodes, each of the nodes executes one or more threads to generate a subset of the data." Emphasis added. Furthermore, the last full paragraph of col. 2 states:

> each of the nodes 12 executes one or more virtual processors or "vprocs" 16. The vproc 16 concept is accomplished by executing multiple instances or threads in a node 12, wherein each such thread is encapsulated within a vproc 16. The vproc 16 concept adds a level of abstraction between the multi-threading of a work unit and the physical layout of the MPP computer system 10.

Thus, nodes and threads are not analogous as there is a one-to-many relationship between nodes and threads such that there would not inherently be queues dedicated to threads. The paragraph crossing cols. 2 and 3 further describes that virtual processors "facilitate redundancy by providing a level of isolation/abstraction between the physical node 12 and the thread of execution, thereby allowing all threads to run even when some nodes 12 have failed or are shut down." Thus, threads are not analogous to nodes.

Moreover, col. 1, lines 11-15 and 22-57, also cited by the Office Action, are not to the contrary. Those sections state that processor nodes are computers with CPUs and that

threads can execute simultaneously on different nodes. However, this does not mean that a node, which may have several processes running thereon, is analogous to a thread, which is a sub-part of a process – just that a thread can run on a processor node.

The Office Action also incorrectly asserts that, in the '093 patent, "each node contain[s] a task queue" and cites col. 4, lines 41-50 in support of that allegation. As can actually be seen, the local buffer that is referenced by the Office Action is neither a queue (acting under a FIFO scheme) nor a LIFO (acting as a stack). The buffer is part of a data structure known as a "heap" that is used in a merge sort. See, e.g., the paragraph crossing cols. 3 and 4. In fact, the second full paragraph of col. 4 states "This buffer 24 is the ordered answer set generated by the merge-sort function, which will eventually be presented to the client requesting the data." Thus, the buffer is not a task queue at all.

Lastly the Office Action cites the '708 patent as teaching the "application of load balancing techniques to internet telephony." However, nothing in the cited section describes that the load-balancing is performed using the claimed method of "reassigning a call flow event from the call flow event queue dedicated to the first thread to the call flow event queue dedicated to a second of the plurality of threads." In fact, the word "thread" does not appear in the '708 patent at all, although at least some of the operating systems disclosed therein are capable of utilizing threads.

It also appears that the gateways 1081, 1084 and 1086 are disjoint systems connected by an Ethernet such that it is unlikely that the "load-balancing" discussed would be moving call flow events from one thread-based call flow event queue to another. Instead, the load balancing could be other techniques, such as utilizing DNS aliasing or assigning which gateway to use based on a round-robin approach. See, e.g., U.S. Patent No. 6,888,836, previously filed in an IDS. Thus, the mere reference to "load-balancing" does not mean that the claimed implementation is anticipated or rendered

obvious. Accordingly, even the combination of all three references fails to teach the same positively recited limitations not taught by the references individually.[1]

There is also no tenable motivation to combine the references in the fashion asserted in the Office Action. The Office Action has cited Lin which uses job dispatching, and combines Lin with a different parallelization technique – assigning threads to virtual processors, the use of which can be balanced. There is no job re-distribution in the '093 patent because there was thread distribution. See, e.g., the first full paragraph of col. 4 which states:

> the coordinator node 12 broadcasts a merge message over the network 14 to all nodes 12 in the system 10. This message spawns merge threads on each receiver node 12. These merge threads request local vprocs 18 to fetch their individual (ordered) answer set data. Each vproc 16 responds by presenting its data as an entry in the local heap 20, using well-known heap sort techniques for inserting the entry into the local heap 20. When the local heap 20 is populated on a given node 12, a local buffer 22 of sorted records is generated.

Thus, by picking and choosing selected parts of two different load-balancing techniques without regard to the overall teachings of those references, the Office Action is attempting to impermissibly change the principle of operation of one of the two references or at least make a combination without first identifying why one of ordinary skill in the art would have found there to be a deficiency to be corrected. Absent a more

[1] It is respectfully noted that earlier arguments about alternate load-balancing techniques being usable with U.S. Patent No. 6,888,836 was never rebutted in the outstanding Office Action. Accordingly, until such time as an Office Action addresses those arguments, Applicant will assume that the Office Action is admitting that the '708 patent could have been discussing techniques such as the techniques of U.S. Patent No. 6,888,836.

in-depth explanation of why one of ordinary skill in the art would have combined the two references, it is respectfully submitted that the combination lacks a legally permissible motivation.

Moreover, even if the '708 patent did disclose that load balancing was important in internet telephony, there is no indication that it would have been performed in the claimed manner or that one of ordinary skill in the art would have been motivated to include it in the claimed manner. Further, there is no indication why one of ordinary skill in the art reading the '708 patent, directed to telephony systems, would have consulted Lin or the '093 patent. The fact that references share some phrases in common is insufficient to assume a motivation to combine those particular references in light of the multitude of other references that also utilize the same phrases.

Claim 8 similarly recites "program code configured to reassign a call flow event from the call flow event queue dedicated to the first thread to the call flow event queue dedicated to a second of the plurality of threads." Thus, claim 8 and its dependent claims are patentable over the cited combination of references for reasons analogous to the reasons set forth above for the patentability of claim 1.

Claim 15 similarly recites "a call flow manager configured to distribute a plurality of call flow events among a plurality of threads used for managing the processing of a plurality of call flows, the call flow manager optimizing the processing of the call flows by determining which of the plurality of threads are operating inefficiently and reassigning a portion of the call flow events assigned to the dedicated call event queue of the inefficient thread to the dedicated call event queue of another of the plurality of threads having excess call flow processing capacity." Thus, claim 15 and its dependent claims are patentable over the cited combination of references for reasons analogous to the reasons set forth above for the patentability of claim 1.

Consequently, in view of the present amendment and in light of the above discussions, the outstanding grounds for rejection are believed to have been overcome and in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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